

TECHNICAL SPECIFICATIONS

Mains Supply:	115V AC \pm 10%, 50/60Hz, 18VA or 230V AC \pm 10%, 50/60Hz, 18VA or 24DC, 18W
Fuse (F1):	115V - 315mA (T), 5 x 20mm, 250V 230V - 160mA (T), 5 x 20mm, 250V 24V - 1A(T), 5 x 20mm, 250V
Relay Outputs:	Max. switching voltage 250V AC / 220VDC Max. switching Power 1250VA / 150 W
Digital Inputs:	For use with external potential free contacts only, Voltage supplied by ChemPhos (24V DC nominal)
Analogue Inputs:	4..20mA, not isolated, loop powered by ChemPhos
Analogue Outputs:	4..20MA, not isolated, maximum impedance 600 Ohms
Interface:	RS422/RS485, not isolated.
IP Rating:	IP66
Operating Temperature:	0° C to +50°C
Storage Temperature:	-20°C to +50°C
Dimensions:	360mm x 290 x 90mm (W x D x H)
Mass:	3 Kg (including packaging)
EMC Compliance:	Complies with Generic Standards EN 50081-1 and EN 50082-2
Safety:	EN 61131-2



USF WALLACE
& TIERNAN

CHEMPHOS
CONTROLLER
SB.40.400.GE

MEETING QUALITY STANDARDS

In the continued development and improvement of our products certain specifications may be altered without prior notice.



850959/C

USFLimited
Priory Works
Tonbridge, Kent TN11 0QL
Telephone: +44 (0) 1732 771777
Fax: +44 (0) 1732 771800
Email: inform@usft.co.uk
<http://www.usft.co.uk>

USF WALLACE
& TIERNAN
A U.S. Filter Company 11/99

INTRODUCTION

The problems associated with the discharge of phosphates into lakes or rivers and causing eutrophication, are well known. The Urban Waste Water Directive and the requirements from other Agencies have led to further reductions in the discharge consent levels.

To meet these requirements USF Wallace & Tiernan have designed the ChemPhos controller. The controller is designed to work in conjunction with a variety of chemicals and is supplied as a stand-alone controller or as part of a complete chemical dosing system.

The choice of chemical will depend upon the particular site requirements and the operational conditions. The ChemPhos control system provides the user with the versatility of control to suit the application and the chemical used whether it be in liquid or granular form.

CONTROL OPTIONS

- **Control Option 1**
Simple on/off control to stop and start the chemical dosing pump or volumetric or granular feeder.
The chemical dose rate being set at the dosing pump or feeder.
- **Control Option 2**
The pump or feeder is controlled from a 4-20mA flow signal. An additional feature is that under storm water condition a maximum dosing limit can be set which will not be exceeded irrespective of the flow value. Alternatively it can be arranged so that during this period no chemical is injected.
- **Control Option 3**
The pump or feeder is controlled from a 4-20mA flow signal as well as a separate input from either a phosphate/turbidity/on-line BOD Monitor (RACOD). The additional input from the on-line monitor is designed so that it provides feed forward ratio control. The user can again set a dosing limit value.
- **Control Option 4**
Provides Proportional Integral (PI) control to a Redox value set by the user.
- **Control Option 5**
Provides chemical dosing to a profile.
In this mode the pump dose rate is entered into the controller (in litres/hour) to form a dosage profile.
 - a) A daily profile in which the pump dose rate is entered in 6 data points. Each data point covers a 4 hour period.
 - b) The second option covers a weekly (7day) period in which the pump dose rate is entered to cover 24 hourly period per day (168 data points). A copy facility can be used to copy one day's data to another.In each case the dose rate set can be modified by one of the feedback signal options mentioned above.

SYSTEM FACILITIES

ChemPhos is not only designed to carry out the control functions but forms part of the dosing system.

LED indicators are provided for the following:-

Tank Low - Indicates low level alarm in the bulk storage tank. This alarm will also inhibit the dosing pumps to prevent them running dry.

Bund Flood - Indicates bund flood condition. This alarm will also inhibit chemical dosing.

Pump Duty - LED's indicate which pump is operating or has failed.

Automatic or Manual Pump selection

Duty Cycling - ChemPhos includes the facility to set the duty pump rotation

automatically on a daily or weekly basis.

Pump Failure - ChemPhos will also changeover to the standby pump on an alarm generated by a flow switch.

Signal Input Failure Alarm - Any sensor input signal failure alarm is detected and an error message displayed.

Security - Each control sequence can be selected to be accessed through a security code if required.

Serial communications - Read/write facility to all the main variables is available via an RS485 serial link, supporting the Wallace & Tiernan protocol. Profile points will be accessible via the serial bus providing an alternative method of entering these points.

FEATURES

- Modern user-friendly microprocessor technology with inter-active menu assistance
- Automatic duty pump cycling
- Automatic pump changeover on pump failure alarm
- 2 line x 16 character Luminescent display with adjustable display contrast.
- Ergonomic membrane keypad with 6 keys.

- LED Indicators providing operation information
- 5 control options
- Security access code
- Enclosure IP66
- RS 485 interface
- Diagnostic menu to assist maintenance and installation
- 4 Language option.

USF Wallace & Tiernan's scope of supply ranges from the chemical dosing pumps to full turn key contracts including, controllers, tanks, kiosks and complete site installation and commissioning.

Alternatively complete prefabricated systems up to 30m³ chemical storage capacity and housing the above can be supplied which reduce the amount of on site installation work and ensures that pre tested systems are delivered to site.

Aftersales service contracts can also be arranged to suit individual requirements.